

Silicon PNP Darlington Power Transistor

BDX66/A/B/C

DESCRIPTION

- Collector Current $I_C = -16A$
- High DC Current Gain $h_{FE} = 1000(\text{Min}) @ I_C = -10A$
- Complement to Type BDX67/A/B/C

APPLICATIONS

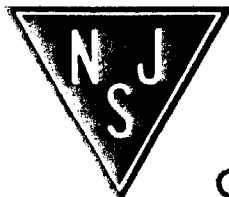
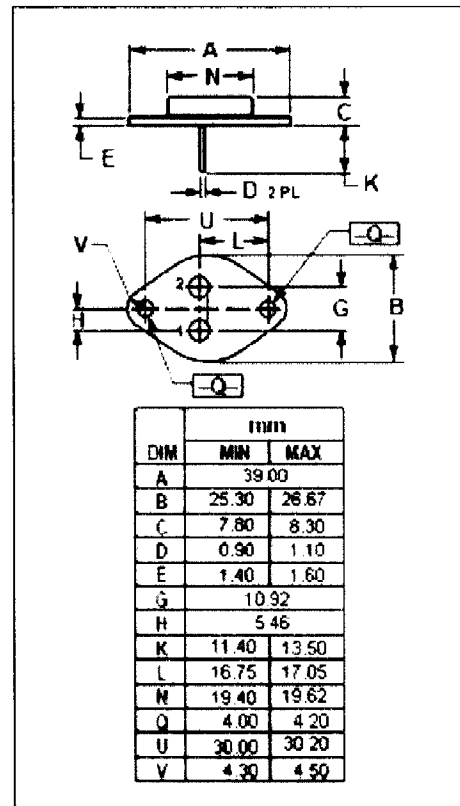
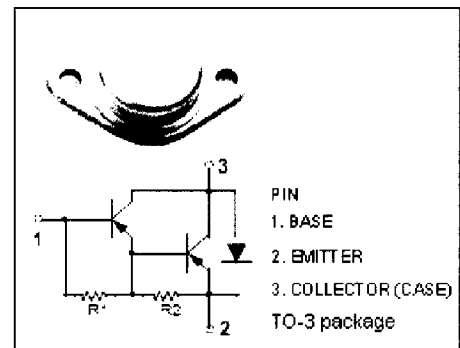
- Designed for audio output stages and general amplifier and switching applications

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

| SYMBOL | PARAMETER | VALUE | UNIT | |
|-----------|--|---------|------------|---|
| V_{CBO} | Collector-Base Voltage | BDX66 | -80 | V |
| | | BDX66A | -100 | |
| | | BDX66B | -120 | |
| | | BDX66C | -140 | |
| V_{CEO} | Collector-Emitter Voltage | BDX66 | -60 | V |
| | | BDX66A | -80 | |
| | | BDX66B | -100 | |
| | | BDX66C | -120 | |
| V_{EBO} | Emitter-Base Voltage | -5 | V | |
| I_C | Collector Current-Continuous | -16 | A | |
| I_{CM} | Collector Current-Peak | -20 | A | |
| I_B | Base Current-Continuous | -0.25 | A | |
| P_C | Collector Power Dissipation @ $T_C = 25^\circ C$ | 150 | W | |
| T_J | Junction Temperature | 200 | $^\circ C$ | |
| T_{stg} | Storage Temperature Range | -65~200 | $^\circ C$ | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|--------------------------------------|------|--------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 1.17 | $^\circ C/W$ |



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ELECTRICAL CHARACTERISTICS

$T_C=25^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT | |
|---------------|--------------------------------------|--|---|------|------|------|----|
| $V_{CE(SUS)}$ | Collector-Emitter Sustaining Voltage | BDX66 | -60 | | | V | |
| | | BDX66A | -80 | | | | |
| | | BDX66B | -100 | | | | |
| | | BDX66C | -120 | | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -10A; I_B = -40mA$ | | | -2 | V | |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C = -10A; V_{CE} = -3V$ | | | -2.5 | V | |
| V_{ECF} | C-E Diode Forward Voltage | $I_F = -10A$ | | -2 | | V | |
| I_{CEO} | Collector Cutoff Current | $V_{CE} = \frac{1}{2}V_{CE0max}; I_B = 0$ | | | -1 | mA | |
| I_{CBO} | Collector Cutoff Current | BDX66 | $V_{CB} = -40V; I_E = 0; T_J = 200^\circ\text{C}$ | | | -5 | mA |
| | | BDX66A | $V_{CB} = -50V; I_E = 0; T_J = 200^\circ\text{C}$ | | | | |
| | | BDX66B | $V_{CB} = -60V; I_E = 0; T_J = 200^\circ\text{C}$ | | | | |
| | | BDX66C | $V_{CB} = -70V; I_E = 0; T_J = 200^\circ\text{C}$ | | | | |
| I_{CBO} | Collector Cutoff Current | $V_{CB} = V_{CB0max}; I_E = 0$ | | | -1 | mA | |
| I_{EBO} | Emitter Cutoff Current | $V_{EB} = -5V; I_C = 0$ | | | -5 | mA | |
| h_{FE-1} | DC Current Gain | $I_C = -1A; V_{CE} = -3V$ | | 2000 | | | |
| h_{FE-2} | DC Current Gain | $I_C = -10A; V_{CE} = -3V$ | 1000 | | | | |
| h_{FE-3} | DC Current Gain | $I_C = -16A; V_{CE} = -3V$ | | 1000 | | | |
| C_{OB} | Output Capacitance | $I_E = 0; V_{CB} = -10V; f_{test} = 1\text{MHz}$ | | 300 | | pF | |

Switching times

| | | | | | | |
|-----------|---------------|--|--|-----|--|---------------|
| t_{on} | Turn-on Time | $I_C = -10A; I_{B1} = -I_{B2} = -40mA$ | | 1 | | μs |
| t_{off} | Turn-off Time | | | 3.5 | | μs |